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Prototype Specifications for an Automated Position Data Analysis Job Aid

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Position data analysis activities are among the most difficult activities performed during operations-based MOS restructuring. This report documents the prototype specifications for a position data analysis job aid. The job aid is a personal computer-based system that can be used to support the assessment of MOS environmental, structural, and deployment data during the position data analysis process. The findings of this report can be used to create prototype software.

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PROTOTYPE SPECIFICATIONS FOR AN AUTOMATED POSITION DATA ANALYSIS JOB AID

EXECUTIVE SUMMARY

Requirement:

In 1988, the U.S. Army Signal Center requested that the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) initiate a focused examination of Military Occupational Specialty (MOS) restructuring issues existing within the Army's Signal Branch. The objective of this effort is to develop and evaluate methods to facilitate the analysis and design of MOS and Career Management Fields (CMFs). This research is an element of a larger effort by ARI's Systems Research Laboratory to produce MANPRINT tools.

The purpose of this research note is to document the prototype specifications for a Position Data Analysis Job Aid (PDAT-JA). The job aid is a personal computer-(PC) based system that provides analytical tools that can be used to support the position data analysis phase of MOS restructuring.

Procedure:

The effort underlying this research note involved six processes. First, a foundation upon which PDAT-JA was to be built was established. Second, the principal elements of position data analysis were identified. Third, the technical and operational feasibility of PDAT-JA were assessed. Fourth, design principles for the systems applications and data base were developed. Based upon this research, essential software prototype elements of PDAT-JA's analysis support aids were identified and described.

Findings:

Position data analysis activities and their relationship to operations-based MOS restructuring were evaluated. The primary findings reported in the sections of this research note provide the first step in the full scale development of prototype position data analysis job aid software.

The specifications are based on the following findings:

1. Development of a prototype PDAT-JA is both operationally and technically feasible.

2. The prototype must have the capability to provide MOS environmental, structural, and deployment data in a format that supports the performance of position data analysis.

3. PDAT-JA should provide the capability to perform comparative analysis between the Army's Authorizations Documents System (TAADS) data and Personnel Management Authorization Data (PMAD) and report data mismatches.

4. PDAT-JA must furnish the capability to perform grade structure analysis using the Army's Average Grade Distribution Matrix as a benchmark for developing MOS grade structures.

Utilization of Findings:

This research note can be used to refine the concepts for the position data analysis job aid before further development of a prototype software. It provides a system description that can be used to support the creation of the prototype software. Also, the research note describes the procedures used in performing position data analysis assisted by a PC-based job aid.

PROTOTYPE SPECIFICATIONS FOR AN AUTOMATED POSITION DATA ANALYSIS JOB AID

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PROTOTYPE SPECIFICATIONS FOR AN AUTOMATED POSITION DATA ANALYSIS JOB AID

Introduction

This research note documents the prototype specifications of the Position Data Analysis Job Aid (PDAT-JA). The purpose of PDAT-JA is to provide personal computer (PC) based analytical aids that can be used to support the position data analysis (PDAT) phase of operations-based MOS restructuring. The results of this effort demonstrate that a PC-based analytical aid can be developed and its use will improve the overall effectiveness of the Army's personnel proponent agencies.

Background

In a research effort conducted by Akman and Haught (1989), position data analysis was determined to be one of the more critical steps in the MOS restructuring process. From this research, the authors concluded that position data analysis itself is not particularly difficult. However, the volumes of data involved and the absence of computer-based support make the process tedious and time consuming. Due to the criticality of PDAT and the requirement to analyze such substantial amounts of data in the analysis process, a job aid to support position data analysis was selected for prototype development.

Overview of the Research Note

This paper is comprised of three sections. The first section provides the framework for developing the prototype Position Data Analysis Job Aid, presents basic prototype concepts, and discusses the role of the prototype system in supporting position data analysis.

The second section describes the design of PDAT-JA. These descriptions include PDAT-JA's system design overview and discussion of the four major subsystems: the Operating Subsystem, the MOS Profiling Subsystem (MPS), the Resource Authorization Analysis Subsystem (RAAS), and the Grade Structure Analysis Subsystem (GSA).

The third section provides a scenario of how the PDAT-JA operates and the flow of events that the MOS analyst follows when performing a typical position data analysis. The section also provides an example of the system in use. The example contains screen displays similar to those that might be seen in an actual system.

A companion document to this report is the PDAT-JA Demonstration Guidebook providing instructions for operating a computer-based demonstration of PDAT-JA along with sample computer screens.

Framework for Developing a Prototype Position Data Analysis Job Aid System

The purpose of this section is to establish the foundation upon which PDAT-JA is to be built. The section is comprised of two subsections. The first discusses basic PDAT-JA concepts. What is the job aid? What is the expected role of the job aid in support of the MOS restructuring process? Second, the technical and operational feasibility are discussed.

Basic Prototype Concepts

The PDAT-JA is a PC-based system designed to improve operations-based MOS restructuring by reducing the burdens of analyzing the large volumes of data involved in position data analysis. PDAT-JA is a user specific application which will enhance the MOS analyst's capability in the analysis process through the use of microcomputer automation.

Table 1 summarizes the principal features of position data analysis in terms of inputs, procedural steps, and resulting products. PDAT-JA will not provide total automation of position data analysis. Nevertheless, the job aid will enhance accomplishment of three of the more time consuming analytical steps:

- Research TAADS and identify MOS positions;
- Review PMAD data;
- Apply the Average Grade Distribution Matrix.

The litany of problems associated with accomplishing these analyses has been a source of consternation to personnel proponents for many years. Because of the "stubby pencil" nature of the work and time-consuming, manual manipulation of data, the potential for error during performance of these elements increases proportionally to the amount of data to be analyzed. To the MOS analyst, these difficulties are not new and have almost become second nature. Nonetheless, the problems are real and the necessity for solutions increase as the Army begins reducing the size of its force and opts for a smaller yet more technologically dependent force structure.

Parts of the solution lie in automated MOS modeling techniques, provision of integrated data bases, and data sorting routines from which the analyst can quickly retrieve summary MOS data or perform MOS grade structure analysis. Although not the total solution, these tools and techniques can lessen the time and resources required to perform position data analysis.

Table 1

POSITION DATA ANALYSIS

PURPOSE Ensure a Total Evaluation of the MOS Environment
INPUTS TAADS MOS Extract PMAD Data Operational and Organizational (O&O) Plan BOIP/QQPRI Information Average Grade Distribution Matrix Current SGA TOE
STEPS OF PERFORMANCE Research TAADS and Identify MOS Positions Review PMAD Data for Outyear Projections Analyze O&O Concept, TOE and TDA, BOIP/QQPRI Apply Average Grade Distribution Matrix Apply Current SGA
OUTPUTS Baseline TAADS Extract Understanding of MOS Environment Impacts of New Systems and Organizations on MOS Graphic Depiction of MOS Health MOS Outyear Projections Indication of MOS Grade Requirements

In sum, position data analysis is a tedious and time consuming process. Automated tools and techniques can assist in the performance of position data analysis. These two factors have led to the idea of developing PDAT-JA.

<u>The Role of PDAT-JA in Supporting the MOS Restructuring Process</u>

PDAT-JA's ability to operate as an integrated element of the position data analysis process and to support analysis of MOS grade structures represents significant improvements in operations-based MOS restructuring. The key to PDAT-JA playing an important role in the MOS restructuring process is its ability to support analysis through rapid data sorting and output reporting (e.g., the overall reduction of "stubby pencil" drills and manual data manipulation). PDAT-JA also provides the user a systematic procedure for manipulating and retrieving position data for the purpose of providing structure to the analytical process and the ability to document findings in a summary report format for audit trail purposes.

A second area where PDAT-JA may be useful is in requirements-based MOS restructuring. The job aid's capability to model MOS grade structures will enhance manpower, personnel, and training (MPT) planning in terms of net increases or decreases in MOS force structures. Once the total number of MOS personnel requirements are known, the requirements can then be modeled. Modeling an MOS in terms of structure will provide insight into accession and training requirements, and general levels of skills needed to support an MOS structure of a particular size. With this information, the capability exists to profile manpower resource requirements prior to the fielding of new equipment systems.

In terms of MPT planning, PDAT-JA provides the cornerstone for the development of future MANPRINT products. Depending on funding, PDAT-JA will be expanded to include other data such as FOOTPRINT, Hardware versus Manpower (HARDMAN) Comparability Analysis Methodology (HCM) data, among others. Along with expanded data capability, MPT and MOS tradeoff algorithms will be developed to support the optimization of MPT and MOS alternatives during the MANPRINT process.

While PDAT-JA does not fully automate position data analysis, the job aid is a tool designed to be used by MOS analysts in order to more quickly identify, develop, and analyze MOS data in support of MOS restructuring.

<u>Technical Feasibility</u>

A system is considered technically feasible if the technology, in this case, hardware and software, can be acquired and assembled in such a manner to meet the functional requirements. In terms of hardware and software, the question is not whether technology exists, but rather can the technology (Army standard microcomputer hardware and software) be modified to support automated position data analytical aids?

Based on the knowledge gained during the course of this research effort, the answer to this question is "Yes". Although microcomputers do not have the large data storage and processing capacity that mainframe computers embody, much can be done in the microcomputer environment to ease the data manipulation and analytical burdens associated with position data analysis. An estimated seventy percent of all MOS actions address MOSs with a total of 3,000 or less authorizations. PDAT-JA could be used in all these instances.

Although no unique software is available to support specific functions of position data analysis, there are a host of software programs that can perform generic functions such as data base management, reports generation, and mathematical modeling, among others. These off-the-shelf software packages may be used to create a first generation PDAT-JA.

<u>Operational Feasibility</u>

Operational feasibility exists if the system can provide useful information in a timely manner, and in a format that supports the MOS analyst's performance of position data analysis.

Operational feasibility also addresses the following:

1. Can PDAT-JA fit into the MOS restructuring process?

2. Will the analyst's ability to perform position data analysis be enhanced by the use of PDAT-JA?

3. Can a user friendly system be developed?

For PDAT-JA to be effective, not only must it have capability to support the performance of position data analysis, it must also fit into the MOS restructuring process. Akman and Haught (1989) identified seven research initiatives in which the MOS restructuring process could be enhanced. Along with PDAT-JA the other enhancements included:

- Standards of Grade Authorization Job Aid;
- MOS Restructure Data Manager;
- MOS Action Plan Generator;
- MOS Action Item Submittal Documenter;
- CMF Assessment Aid;
- MOS Restructure Trade-Off Analysis Model.

Taken as a group, these seven enhancements form an architecture for full-scale development of an automated operations-based MOS restructuring methodology. PDAT-JA is designed to be a subarchitecture of this methodology, therefore being capable of supporting not only position data analysis, but MOS restructuring as a whole.

The introduction of PDAT-JA will allow the MOS analyst to retrieve MOS specific summary data and make assessments on that data more quickly due to the reduction of the data manipulation burden. The system will also allow the analyst to specifically consider explicit position data information required for inclusion in MOS restructuring documentation. From these aspects, the MOS analyst's capability to perform analysis will be augmented.

There is no doubt about the operational feasibility of developing a user friendly PDAT-JA system. T-JA will operate in conjunction with standard Army data base management and spreadsheet development software. Most software applications of this nature can be programmed to support the functions required of position data analysis. Through the use of well designed menu interfacing, only minimal personal computer and software experience will be required of the user for interaction with the system. Although user requirements will not be difficult, user friendliness assumes the user will possess some degree of basic microcomputer and software application knowledge.

Position Data Analysis Job Aid System Design Overview

The purpose of this section is to provide an overview of the PDAT-JA system design. There are five elements that form the system:

- PDAT-JA Operating Subsystem;
- MOS Profiling Subsystem (MOSPS);
- Resource Authorization Analysis Subsystem (RAAS);
- Grade Structure Analysis Subsystem (GSA);
- HELP Functions.

This section depicts these elements in terms of their fundamental structure and the association between them and the PDAT-JA users. An overview of the system is presented; then each subsystem is delineated separately.

PDAT-JA System Design Overview

Figure 1 depicts the basic design of the PDAT-JA system. The system is comprised of the PDAT-JA Operating Subsystem, the MOS Profiling Subsystem, the Resource Authorization Analysis Subsystem, and the Grade Structure Analysis Subsystem, and the HELP Subsystem.

The PDAT-JA Operating Subsystem is an executive routine that provides user interface and permits access to the other subsystems. The operating system includes housekeeping functions related to accessing the subsystems, their associated data files, and processing routines. The operating subsystem provides the protocols and entry screens permitting use of the subordinate subsystems.

The five subordinate subsystems create, modify, and interact through the PDAT-JA Data Base. The data base contains MOS specific manpower and authorizations data. Representative data will include manpower requirements and authorization data, MOS data, additional skill identifier (ASI) data, Table of Organization and Equipment (TOE) data, Major Army Command, and Unit Identification data, among others. Creating the data base assumes that the personnel proponents have capability to download Headquarters Department of the Army (HQDA) authorizations data from a mainframe-based environment into a PC-based environment. The other data types are products of the PDAT-JA process and would exist in the data base through the time a particular MOS is being analyzed.

MPS is comprised of processing routines which are used by the MOS analyst to produce MOS position data through defined sets of profile criteria (number of authorizations by major Army command or additional skill identifier, etc.). This system will

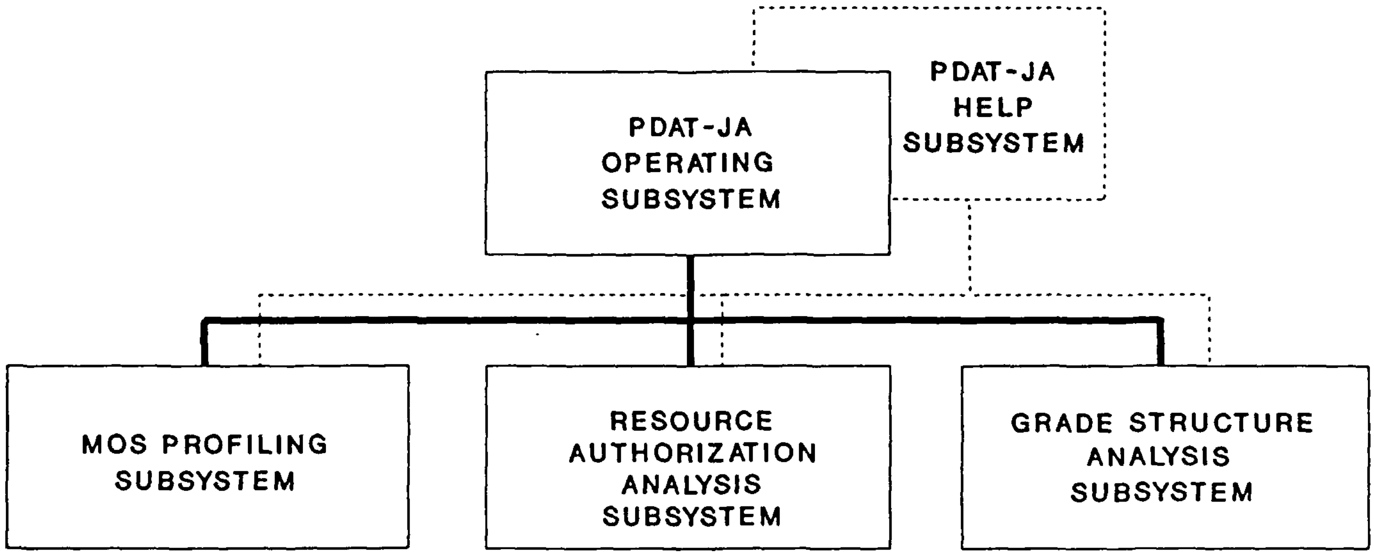


Figure 1

PDAT-JA SYSTEM OVERVIEW

enable the analyst to manipulate data and quickly obtain and generate reports on environmental, structural, and deployment data for a specified MOS.

RAAS is also comprised of processing routines used by the MOS analyst to produce MOS data. However, this subsystem provides information from multiple data types. RAAS will permit the MOS analyst to perform comparative analysis between manpower requirements and authorizations data and position authorization data. The system will automatically identify mismatches in MOS authorizations or unit information between the two data types and generate a summary report which will in turn prompt the analyst to research the causes for mismatch.

GSA is basically a spreadsheet software that contains several mathematical formulas which facilitate MOS grade structure modeling. GSA integrates the Army's Average Grade Distribution Matrix (AGM) into an automated format which will enhance the speed and precision of MOS grade structure modeling.

The HELP Subsystem performs two kinds of help functions. First, is the provision of standard systems utilization help and, second, is position data analytical help.

These five subsystems plus the data base are the major structural components of the PDAT-JA system. The focus of the prototype's specification and development efforts will center on a system as outlined above.

PDAT-JA Design

Design of PDAT-JA is based on the principles summarized in Table 2. The first principle is that position data analysis requires knowledge of environmental, structural, and deployment data pertaining to the MOS undergoing analysis.

Environmental data allow the analyst to consider the conditions by which the MOS is surrounded (e.g., combat environment, support environment, etc.), the mission requirements of the MOS in those environments, and the availability of MOS authorizations to women based upon combat probability of the units in which the MOS is found.

Structural data assist the analyst in determining if the MOS provides adequate career progression and stability. This type of data also facilitates identification of supervisor to subordinate ratios and the grade needs of each specific work center or paragraph.

Deployment data assist the analyst in judging if the MOS is space imbalanced (SIMOS) by determining how many authorizations

TABLE 2

PDAT-JA DESIGN PRINCIPLES

Position Data Analysis Requires:

1. Knowledge of MOS Environmental, Structural, and Deployment Data
2. Comparison of PMAD and TAADS Authorizations and Identification of Increases or Decreases in MOS Authorized Strength
3. Application of the Averade Grade Distribution Matrix as a Benchmark for Developing Proposed Revisions to an MOS Structure
4. Assessment of each Paragraph in the Authorization Document Containing the MOS under Analysis

are outside the Continental United States (OCONUS). Also, this category of data provides the analyst with knowledge of the type units (field tactical versus fixed facility) in which MOS positions are found. This aids training assessment and SGA development.

Without the above knowledges, the MOS analyst cannot make competent judgements or decisions as to MOS grade structure requirements, SIMOS implications, and impact on women in the Army, among other issues.

The second principle is that position data analysis requires comparison between the Army Authorization Documents System (TAADS) and Personnel Management Authorization Data (PMAD) and identification of any increases or decreases in MOS authorized strength. This procedure is essential in identifying MOS authorization variance, documenting the units in which variance occurs, and prompting the analyst to determine the causes for variance.

The next principle is that the AGM will be used as a benchmark for developing proposed revisions to an MOS structure. Although the AGM is not to be used as justification for performing an MOS restructure, the matrix will be used as a guide for indicating the relative health of an MOS.

The last principle is that every TAADS paragraph containing the MOS under analysis will be assessed for structure requirements, training implications, and supervisor to subordinate ratios, among other assessments. For the purposes of position data analysis, a paragraph may be defined as the lowest authorization unit to be analyzed in an authorization document. An authorizations document paragraph contains a description of the work center and is comprised of MOS information, grade requirements, number of positions authorized, as well as other data.

The PDAT-JA system is designed to incorporate these four principles into the systems application programming. For example, suppose the analyst wants to gain an understanding of the basic structure and deployment of an MOS. To gain this knowledge, the analyst will need to have fundamental information such as the current grade structure, the type of units in which the MOS is found, and the SIMOS implications of the MOS.

PDAT-JA can provide this information very quickly. The system will sort the data files and sum the total number of authorizations for a particular MOS, provide data on the type and location in which the MOS is found (CONUS versus OCONUS), and report the authorizations by grade and aggregate. The output from this process provides the analyst with valuable information on how the MOS is currently structured in terms of grade cell distribution (number of E3s, E4s, E5s, etc.) as well as information on SIMOS.

The PDAT-JA Data Base

The PDAT-JA Data Base serves as a repository for all data resulting from the downloading of TAADS and PMAD data. The data base also serves as repository for data created as a result of user interaction with the PDAT-JA system.

As delineated in Figure 2, the PDAT-JA Data Base contains three major types of data: personal computer TAADS (PCTAADS), personal computer PMAD (PCPMAD), and modified PCTAADS (MPCTAADS). The data files developed from downloading TAADS and PMAD data into the personal computer environment are designated as personal computer TAADS and PMAD data files in order to identify them as extracts from their respective HQDA data files, and denote their compatibility to the microcomputer environment. PCTAADS and PCPMAD data files will mirror TAADS and PMAD in their respective structures. The only differences will lie in the MOS specific nature of the PC-based files and of course the file size will be smaller. Following are descriptions of each type.

PCTAADS Data. To describe PCTAADS data, one must first describe TAADS data as PCTAADS is MOS specific data extracted from TAADS. AR 310-49, The Army Authorization and Documents System (TAADS), states that personnel resource managers, in this case personnel proponents, "....use TAADS data for ongoing force planning, programming, budgeting, procurement, and asset distribution. They will also extract detailed data for use with special projects or studies." PCTAADS data serve this purpose for the MOS analyst.

Figure 3 provides an example of the data structure and data types related to MOS authorizations. As depicted in this figure, PCTAADS is a file composed of records organized by fields. PCTAADS provides the capability to analyze these data down to the paragraph (workcenter) level of detail. PCTAADS provides both MPS and RAAS with raw MOS data that the subsystems will in turn use to sort, sum, and generate reports. Also, PCTAADS provides the basic structure to develop the PCTAADS worksheet from which MPCTAADS is generated. The PCTAADS represent a read-only file that cannot be directly altered by the analyst.

PCPMAD Data. Analogous with PCTAADS, to describe PCPMAD, one also must first describe PMAD as PCPMAD is a PC-based data file containing MOS specific data extracted from PMAD. PMAD data is utilized by HQDA as the basis for personnel management decisions and policy formulation. PMAD provides a tool for the acquisition, training, and distribution of personnel resources.

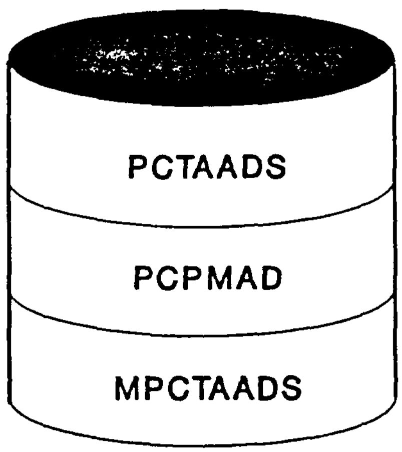


Figure 2

PDAT-JA DATA BASE

SRC	UIC	UNIT DESCRIPTION	PARA	LINE	DUTY TITLE	ID	GR	MOS	ASI	BR	REQ	AUTH	CCNUM	LCC
	WCESAA	MSL CO DIV SPT	103	01	MSL REPAIRER	I	E5	00X20		NC	1	1	E10289	
			103	02	MSL REPAIRER	I	E4	00X10			2	2	E10289	
			103	03	MSL REPAIRER	I	E3	00X10			3	3	E10289	
								UIC TOTAL			6	6		

a. Sample PCTAADS Data

PCTAADS HEADER INFORMATION

XXXXXX	XXXXXXXXXXXXXX	XXX	XX	XXX XXXXXXXX	X	XX	XXXXX	XX	X	X	XXXXXX
		XXX	XX	XXX XXXXXXXX	X	XX	XXXXX		X	X	XXXXXX
	Paragraph Data	XXX	XX	XXX XXXXXXXX	X	XX	XXXXX		X	X	XXXXXX

Line Data

b. PCTAADS Data Schematic

Figure 3

SAMPLE PCTAADS DATA

PCPMAD data used by the MOS analyst to assist in the performance of position data analysis to support personnel proponent recommended changes to HQDA policy.

Figure 4 provides an example of the data structure and data types related to MOS authorizations in PCPMAD. Unlike PCTAADS, PCPMAD does not reflect MOS data at the paragraph level of detail. Because of the way PMAD is designed, PCPMAD can only reflect MOS data at the Unit Identification Code (UIC) level of detail which is one detail level removed from what PCTAADS provides. In other words, PCPMAD provides an aggregate MOS total by grade of all positions in the UIC authorized the MOS. Another distinction between PCPMAD and PCTAADS data is that PCPMAD data not only contain the current MOS authorizations, but also project authorizations for six years beyond.

PCPMAD, which is also a read-only file, provides RAAS with raw MOS data that the subsystem will use in conjunction with PCTAADS to sort, sum, and generate reports. The analyst will also use PCPMAD data to support personnel data analysis and to project outyear MOS structure requirements resulting from recommended standards of grade authorization (SGA) changes.

MPCTAADS Data. MPCTAADS is MOS data created as a result of SGA application to PCTAADS. As will be discussed in the reference to MPS, these data are a product of user interaction with MPS and the PCTAADS worksheet.

The PDAT-JA Operating Subsystem

The PDAT-JA Operating Subsystem controls all the procedures that PDAT-JA needs to operate. Menu presentation is displayed in a standard bar format with operations available in pull-down menus as is typical in many software systems today. Figure 5 provides an example of the basic control screen. The main menu bar provides options to access each of the major subsystems. Additionally, there is access to the data file development and help functions. The user makes a primary selection on the menu bar; the system then provides second and subsequent level options in pull-down menus from which the PDAT-JA user may select the desired option.

The operating system is comprised of commands and subsystem interface elements. The commands element provides both instructions to the analyst and responds to commands from the analyst. PDAT-JA provides interface with the analyst by utilizing a series of system options and question prompts. In doing so, the system assists the analyst in determining what type of data processing, analysis support, or data development needs are required.

UIC	SRC	MOS	GR	FY90	FY91	FY92	FY93	MACOM
WA12AA	01234L001	OOX	E7	1	1	1	1	E1
			E6	1	1	1	1	
			E5	2	2	2	2	
			E4	3	3	3	3	
			E3	4	4	4	4	
		MOS TOTAL		11	11	11	11	
		UIC TOTAL		11	11	11	11	

a. Sample PCPMAD Data

PCPMAD HEADER INFORMATION								
$\underbrace{\text{XXXXXX}}$	XXXXXXXXX	XXX	XX	X	X	X	X	$\underbrace{\text{XX}}$
			XX	X	X	X	X	
UIC Data			XX	X	X	X	X	Command
			XX	X	X	X	X	Code
			XX	X	X	X	X	Data

b. PCPMAD Data Schematic

Figure 4

SAMPLE PCPMAD DATA

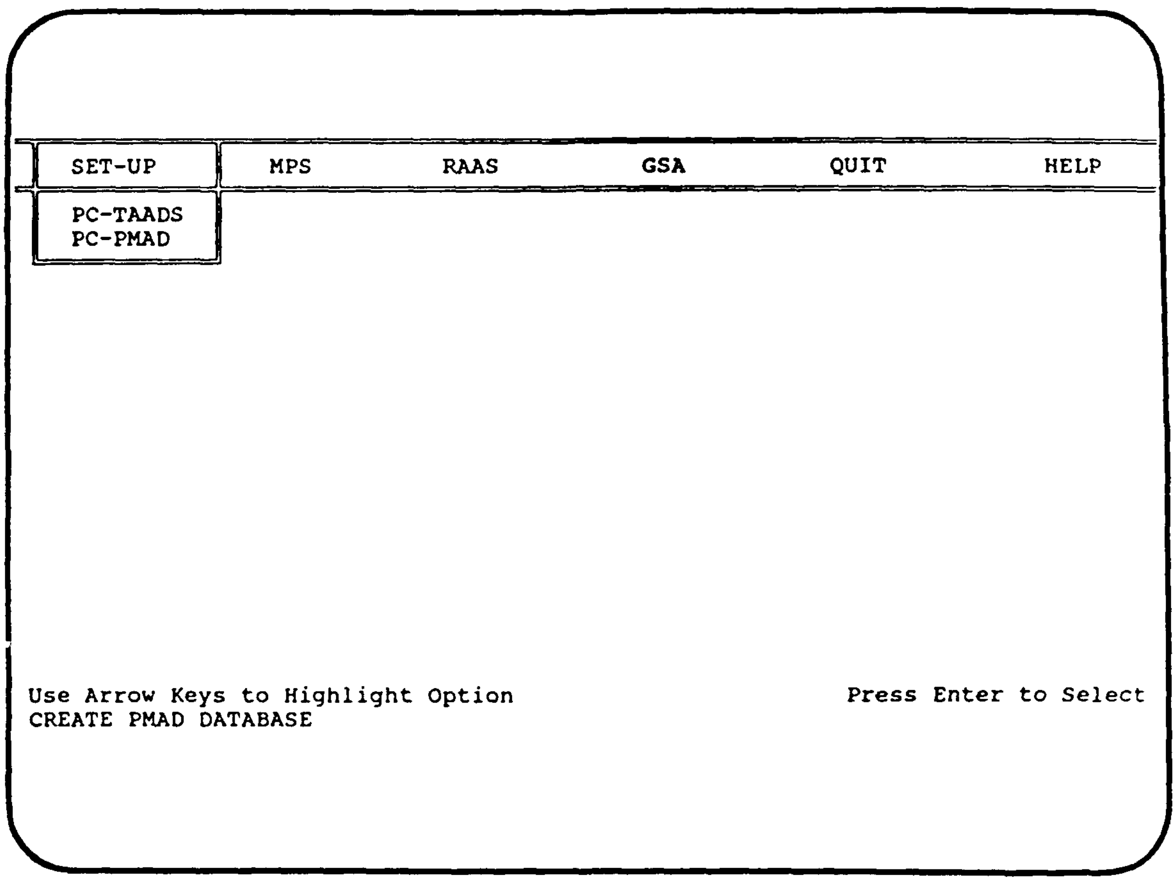


Figure 5

MAIN MENU

Beyond serving as the executive routine that provides user interface and access to the subsystems, the operating subsystem also provides the capability to download HQDA generated TAADS and PMAD data into the PDAT-JA data base. The downloading capabilityis completely automated requiring very little input from the user.

Together, PCTAADS and PCPMAD constitute the initial PDAT-JA data base. PCTAADS will supply data input to MPS while PCTAADS and PCPMAD provide data input to RAAS.

The MOS Profiling Subsystem (MPS)

The purpose of the MOS Profiling Subsystem is to develop data for assessment of the environment, structure, and deployment of MOSs in support of position data analysis. MPS is also designed to assist the user in modifying PCTAADS to conform with the SGA for a particular MOS.

Current methods used by the MOS analyst in gathering data to be used for assessing the impacts of environment, structure, and deployment on an MOS require repeated iterations of manual sorting, counting, formulating, and annotating MOS data on separate worksheets. Just to acquire basic MOS information such as the distribution of MOS authorizations between field units and fixed facility units requires hours of searching through TAADS reports and manually counting each MOS authorization found in a field unit and annotating them on a separate work sheet by grade. Then, the analyst subtracts these numbers from the total by grade authorizations to determine how many MOS authorizations are found in fixed facility units.

Gathering the information as described above is but one example of position data that the analyst must assemble from TAADS in order to perform an adequate analysis. However, as a minimum, there are five other categories of data the analyst must gather, formulate, and analyze to accomplish position data analysis. They are: (1) the total of MOS authorizations by grade, (2) the number of MOS authorizations that require skills beyond those of the basic MOS, (3) the number of MOS authorizations that require special qualifications beyond those of the basic MOS, (4) the distribution of MOS authorizations by Major Army Command, and (5) the SIMOS implications of the MOS. When taken together, these analysis requirements represent a significant undertaking in terms of time and manpower.

MPS is designed to relieve the analyst of the necessity to manually manipulate data by automating this process through the provision of automated PCTAADS data files and the use of preprogrammed data sorting routines. To this end, MPS supports four major uses. First, MPS is the interface between the user, PCTAADS, the PCTAADS worksheet, and MPCTAADS. In accomplishing this role, the subsystem functions largely as data sorter and generator.

Next, the subsystem sorts data and provides MOS summary reports from PCTAADS and MPCTAADS based upon predefined position data criteria. Third, MPS provides an on screen, line-by-line display of PCTAADS data and an SGA worksheet that will in turn provide capability for the user to input SGA data into the system.

Finally, the subsystem provides capability to generate modified PCTAADS (MPCTAADS) data as a result of user input and compare the original MOS data with the modified data. The comparison aims at determining how much of the restructuring need, if any, is a result of misapplication of the current SGA.

MPS Summary Reports. Figure 6 provides a schematic of an MOS data file and the process used by MPS to generate summary reports. Based upon the report selected by the analyst, the subsystem searches the data file for the data requested. In this example, the dotted black line on the right of the data fields indicates the user selected "MOS" as the primary sort criteria. The other lines indicate default criteria programmed into the sort routine which will provide a summary of the MOS by grade and total number authorized. After MPS sorts the data, the system creates a report file and provides the requested output.

The process used by the subsystem to generate summary reports is basically the same for each report. The only differences will be in the data field or fields programmed as the primary sort criteria for each report.

MPS summary reports provide the MOS analyst with position data specific MOS information which is used to assist in assessment of the MOS's environment, structure, and deployment. As depicted in Table 3, MPS provides the user with seven MOS summary reports. The reports may be produced from either PCTAADS or MPCTAADS and may be output to the computer screen, the printer, or both the screen and printer as defined by the user.

Summary Report of MOS Authorizations by Grade. This report provides general information on the size and structure of a given MOS. The report contains the grade structure of the MOS (E3, E4, E5, etc.), the number of authorizations for each grade cell, and the total number of MOS authorizations as depicted in Figure 7. The summary of MOS authorizations by grade is used to provide MOS data input to the GSA which will compare the MPS provided MOS structure with Averade Grade Distribution Matrix.

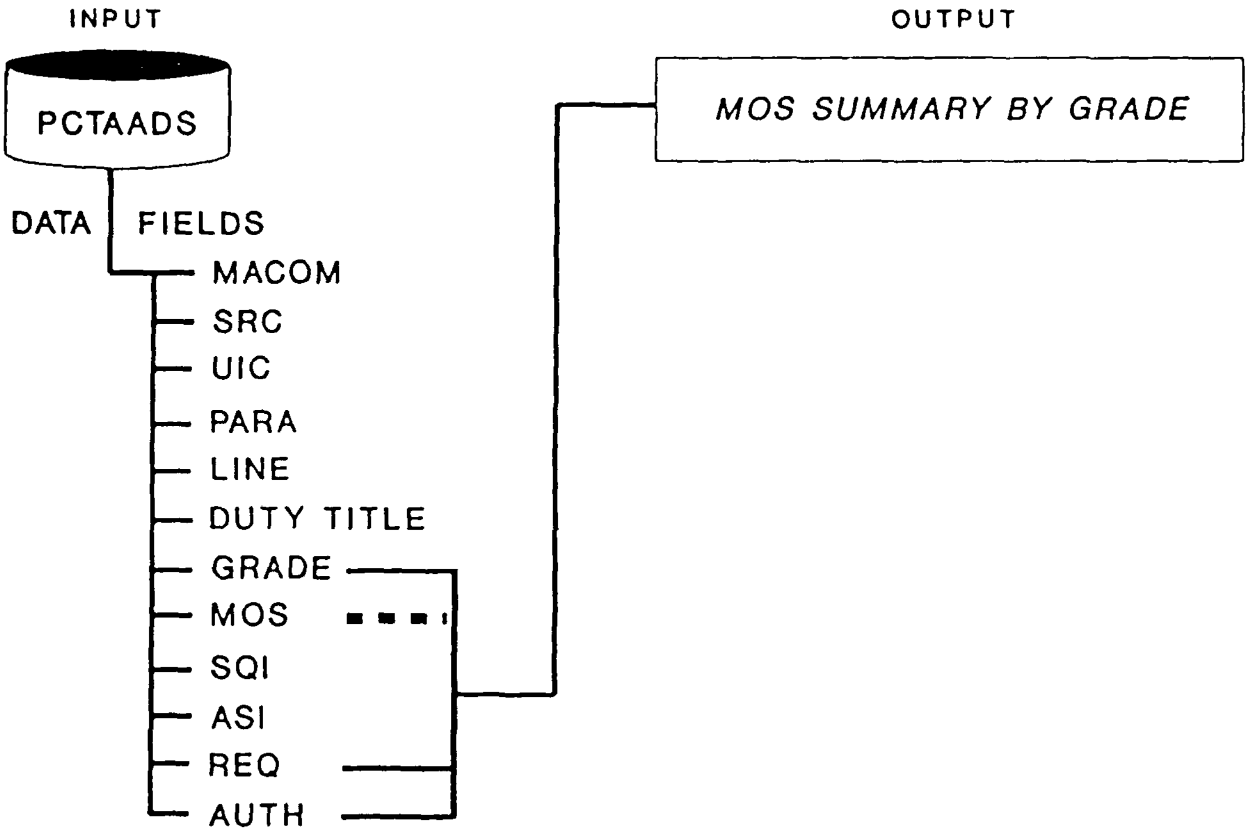


Figure 6

DATA SELECTION SCHEMATIC

TABLE 3

MPS SUMMARY REPORTS

Summary Report of MOS Authorizations by Grade
Summary Report of Additional Skill Identifier (ASI) Authorizations by Grade
Summary Report of Specialty Qualification Identifier (SQI) Authorizations by Grade
Summary Report of Major Army Command (MACOM) MOS Authorizations by Grade
Summary Report of MOS Authorizations Table of Organization and Equipment (TOE) Versus Table of Distribution and Allowance TDA by Grade
Summary Report of MOS Authorizations Continental United States (CONUS) Versus Outside of Continental United States (OCONUS) by Grade
MOS Profile Summary Report

SUMMARY OF MOS AUTHORIZATIONS BY GRADE

MOS	GRADE					TOTAL
00X	E3	E4	E5	E6	E7	
REQ	119	116	65	62	38	400
AUTH	94	100	48	54	36	332
DELTA	-25	-16	-17	-8	-2	-68

Figure 7

MOS SUMMARY REPORT

Summary Report of Additional Skill Identifier (ASI) Authorizations by Grade. The ASI Summary Report provides the total number of MOS authorizations by grade which require additional skills beyond those required by the MOS. As depicted in Figure 8, this report provides the analyst with a listing ofthe ASIs associated with the MOS, and the total number of MOS authorizations by grade affiliated with each ASI.

The ASI Summary Report is used by the analyst to determine how many ASIs are associated with the MOS, what grade structures are related with each ASI, what percentage of the MOS each ASI represents, and what percentage of the total MOS requires additional skills. In the report depicted, more than half of the MOS is associated with an ASI. Of the three ASIs represented, the one with the largest amount of authorizations is ASI "Y1". Y1 is a transition ASI, indicating the MOS is undergoing a transition of some sort. The analyst, if not already aware, needs to determine the cause of the transition. Knowledge of these factors is essential when making decisions pertaining to SGA development, analyzing training, or making recommendations in terms of personnel utilization.

In many cases, ASIs require their own grade structure, require specialized training, and often require as many as twice the number of personnel trained as ASI positions authorized. The over training of ASI personnel requirements provides enough personnel in the personnel system to ensure cross utilization of people in both their ASI and MOS skills.

Summary Report of Specialty Qualification Identifier (SQI) Authorizations by Grade. The purpose of this report is to provide the analyst with the number of MOS authorizations by grade which are associated with special qualifications. As shown by Figure 9, this report consists of a listing of SQIs associated with the MOS and a summary by grade of the number of MOS positions in each SQI.

The SQI Summary Report is used by the analyst in much the same way the ASI report is used. In this case, however, the analyst requires knowledge of SQI structure information. This information is also key when making decisions in terms of SGA development and personnel utilization. An SQI denotes special qualifications such as Non-Career Recruiter, Instructor, First Sergeant, Installer, and Ranger, among others.

In some instances, the grade structure of a particular SQI is centrally managed by HQDA, Training and Doctrine Command, or a proponent school. A good example of a centrally managed SQI is the SQI "H" or Instructor. What this means is an Army common SGA already exist for instructors, and the analyst normally cannot develop or change a grade structure of any position that is

SUMMARY OF ASI AUTHORIZATIONS BY GRADE

MOS 00X	ASI	E3	E4	GRADE E5	E6	E7	TOTAL
AUTH	N1	2	7	3	1	0	13
AUTH	Y1	44	57	21	5	2	129
AUTH	W2	13	19	10	4	1	47
TOTAL ASI AUTH		59	83	34	10	3	189
TOTAL MOS AUTH		94	100	48	54	36	332

Figure 8

ASI SUMMARY REPORT

SUMMARY OF SQI AUTHORIZATIONS BY GRADE

MOS 00X	SQI	E3	E4	GRADE E5	E6	E7	TOTAL
AUTH	H	0	0	0	11	2	13
AUTH	G	0	14	26	5	3	48
AUTH	M	0	0	0	0	4	4
TOTAL SQI AUTH		0	14	26	16	9	65
TOTAL MOS AUTH		94	100	48	54	36	332

Figure 9

SQI SUMMARY REPORT

associated with the SQI. The analyst must, however incorporate the grade structure associated with instructors within the SGA developed for the MOS.

The SQI report shown in the figure exhibits information that may be important to the analyst during position data analysis. First, the MOS contains 13 instructor authorizations as denoted by the SQI H. Next, 48 Ranger positions are authorized in the MOS as designated by the SQI "G." This information is important as Ranger positions are closed to females. Last, the MOS is authorized four First Sergeants which are identified with the SQI "M". Since the four First Sergeant positions are linked to the grade of E7, the analyst should verify that the positions meet the regulatory guidance for designating the positions as requiring the "M" SQI.

Summary Report of Major Army Command (MACOM) MOS Authorizations by Grade. The purpose of this report is to provide the analyst with information on how the MOS is deployed throughout the Army. As depicted in Figure 10, this report furnishes a listing of the command code for each MACOM and an aggregate by grade of the MOS authorizations contained in each.

The MACOM Summary Report is used by the analyst to calculate the total number of MOS authorizations in each MACOM, the grade structure associated with the MOS in each MACOM, and what percentage of the MOS is deployed in each MACOM. MACOM information may furnish the analyst with some insight into SIMOS implications of the MOS's deployment as well as possible SGA implications. In the figure, a predominant portion of the MOS's authorizations are deployed under command code "E1". This would suggest to the analyst that grade of the MOS is space imbalanced as "E1" is the code for the U.S. Army, Europe and Seventh Army.

In addition, four E7 positions are authorized under command code "MD" which is the code for the Army Surgeon General. As this MOS is not one that is normally associated with Army medicine, the analyst should determine why the positions are authorized in this particular command.

Summary Report of MOS, Table of Organization and Equipment (TOE) versus Table of Distribution and Allowance (TDA) by Grade. This report provides the analyst with an overview of the MOS's deployment (e.g. field maneuver units versus fixed facilities) as well as possible environmental considerations based on where the MOS positions (in TOE) would be located on the battle field. As shown in Figure 11, the report first provides a listing of Standard Requirement Codes (SRC), which are basically the same as TOE numbers, and the total by grade of the authorized MOS positions in each. Next, the report provides a summary of the total by grade of all MOS positions authorized in TOE and then furnishes a summary of MOS positions authorized in TDA.

SUMMARY OF MACOM AUTHORIZATIONS BY GRADE

MOS 00X	MACOM	E3	E4	GRADE E5	E6	E7	TOTAL
AUTH	E1	38	61	36	34	21	190
AUTH	FC	6	14	6	5	3	34
AUTH	TC	4	12	3	11	6	36
AUTH	MD	0	0	0	0	3	3
AUTH	P8	46	13	3	4	3	69
TOTAL MOS AUTH		94	100	48	54	36	332

Figure 10

MACOM SUMMARY REPORT

SUMMARY OF MOS AUTHORIZATIONS TOE vs TDA BY GRADE

				GRADE			TOTAL
MOS	SRC	E3	E4	E5	E6	E7	
00X	02345H400	5	9	3	2	2	20
	02346H500	20	15	6	4	2	
	02347H400	57	58	26	30	22	193
AUTH	TOE	82	82	35	36	25	260
AUTH	TDA	12	18	13	18	11	72
TOTAL MOS AUTH		94	100	48	54	36	332
TOTAL P1 POSITIONS		0	14	26	5	3	48

Figure 11

TOE VERSUS TDA SUMMARY REPORT

The report of MOSs in TOE versus TDA is employed by the analyst to determine what percentage of the MOS is found in TOE, in what type of TOE the positions are (combat, combat support, or combat service support), what percentage of the MOS is found in TDA, and what grade structures are associated with each.

TOE versus TDA information is important for several reasons. First, if most of the TOE positions are found to be in battalion level combat units (Infantry, Armor, Cavalry, etc.), it could likely have an impact on the female content of the MOS; Congress has mandated women cannot serve in units that have a high combat probability. Next, if the MOS is found predominantly in TOE, training may require reviewing to insure that the thrust is consistent with TOE needs.

Finally, the MOS grade structure found in both TOE and TDA is important. In many cases the grade structure found in TOE is primarily in the lower grades (E3 through E6). The reason for this is TOE elements are usually smaller than elements found in TDA; therefore, a lower grade structure exists. And secondly, in many instances the duty requirements of TDA positions dictate a higher skill level because of mission complexity. Some examples of positions requiring higher skills are instructors, principle NCO positions in major headquarters elements, and positions found in depot level maintenance facilities. Knowledge of TOE versus TDA information as outlined above is crucial to developing an SGA that provides a balanced grade structure for both TOE and TDA as well as insuring that women in the Army and training issues are addressed.

Summary Report of MOS Authorizations, Continental United States (CONUS) versus Outside of Continental United States (OCONUS) by Grade. The purpose of the CONUS versus OCONUS report is to provide the analyst with data in support of interpreting the SIMOS implications of an MOS. The report furnishes a listing of MOS authorizations summarized by grade for both CONUS and OCONUS authorizations as depicted in Figure 12.

This report is used by the analyst to determine how much of the MOS is located in OCONUS units as opposed to the number located in CONUS units. As defined in the Guide for Preparation of Changes to the Military Occupational Classification Structure (MOCS Handbook), U.S. Army Personnel Integration Command, 1988, an MOS is considered SIMOS when fifty-five percent or more of its authorizations are OCONUS. With the data provided by the SIMOS Summary Report, the analyst can quickly ascertain if an MOS is space imbalanced.

SUMMARY OF MOS AUTHORIZATIONS CONUS vs OCONUS BY GRADE

MOS 00X		GRADE E3	E4	E5	E6	E7	TOTAL
AUTH	OCONUS	84	74	39	38	24	259
AUTH	CONUS	10	26	9	16	12	73
TOTAL MOS AUTH		94	100	48	54	36	332

Figure 12

CONUS VERSUS OCONUS SUMMARY REPORT

The report shows a total of 259 MOS authorizations are in OCONUS commands leaving only 73 in CONUS. From this information, the analyst can quickly calculate that 78 percent of the MOS is OCONUS based. Therefore, confirming the MOS is, in fact, SIMOS.

MOS Profile Status Report. The purpose of the MOS Profile Status Report is to provide the analyst with an overview of the MOS's status based upon the output generated from the MOS summary reports. As depicted in Figure 13, the Profile Status Report provides an evaluation of the output summary reports and furnishes a code ("red" for serious impact, "yellow" for item of concern, and "green" for no impact) to annotate the status of the MOS in terms of each report category along with a narrative description of any impact the category may have on the MOS.

MPS generates the MOS Profile Status report through the use of preprogrammed rules developed for each summary report category. The rules are developed from HQDA policy and general rules-of-thumb used by analysts when performing MOS restructure analysis. Following is a breakout of each summary report category and the rules used to support MPS's evaluation.

MPS evaluates the Summary of ASI Authorizations by Grade output by using three rules: (1) for ASI's that constitute more than 50 percent of an MOS, consideration will be given to either including the ASI requirements within the MOS or creating a new MOS, (2) each ASI should have a minimum of 20 authorizations unless the ASI training is 20 or more weeks, and (3) the life span for ASI Y1 will be no longer than three years.

The rule used by MPS to evaluate SQI Authorizations by Grade is: Authorized positions associated with SQI of "H" for instructor will normally be graded in accordance with (IAW) the standards of grade authorization for instructors found in Enlisted Career Management Fields and Military Occupational Specialties, Army Regulation (AR) 611-201.

TOE versus TDA MOS authorizations are evaluated using a rule-of-thumb to ensure women in the Army issues are addressed. Although not an Army policy, this rule is designed to assist identifying MOSs that currently are either closed to females and should not be, or MOSs that are open to females and should be closed. The rule is: MOSs that are comprised of 50 percent or more combat probability code 1 (P1) positions should be considered for identification as being closed to female soldiers. MOSs that are comprised of less than 50 percent P1 positions should be considered for identification as being open to both male and female soldiers.

MOS PROFILE STATUS REPORT

MOS: 00X

SUMMARY OF MOS AUTHORIZATIONS BY GRADE

XX ASI Y1...VALIDATE NEED FOR TRANSITION ASI...

XX ASI Y1...VALIDATE DATE DATE ASI DOCUMENTED IN TAADS...ASI ONLY VALID FOR THREE YEARS...

XX ALL ASI...NO ASI IS EQUAL TO MORE THAN 50 PERCENT OF MOS 00X...

XX ASI N1....AST AUTHORIZED LESS THAN 20 POSITIONS...VALIDATE NEED...

SUMMARY OF SQI AUTHORIZATIONS BY GRADE

XX SQI M.....DELETE SQI M FROM MOS...SQI NOT AUTHORIZED FOR E7 POSITIONS

XX SQI H.....VALIDATE GRADE STRUCTURE

SUMMARY OF MOS AUTHORIZATIONS TOE vs TDA

XX IMPACT ON WOMEN...NONE...MALE ONLY POSITIONS EQUAL LESS THAN 50 PERCENT OF AUTHORIZED POSITIONS...

SUMMARY OF MOS AUTHORIZATIONS CONUS vs OCONUS

XX SIMOS IMPACT...MOS IS SIMOS...OCONUS AUTHORIZATIONS EQUALS 78 PERCENT OF MOS...

X PERCENT OF TOTAL MOS AUTHORIZATIONS OCONUS...78
X PERCENT OF TOTAL E7 AUTHORIZATIONS OCONUS....50
X PERCENT OF TOTAL E6 AUTHORIZATIONS OCONUS....70
X PERCENT OF TOTAL E5 AUTHORIZATIONS OCONUS....81
X PERCENT OF TOTAL E4 AUTHORIZATIONS OCONUS....74
X PERCENT OF TOTAL E3 AUTHORIZATIONS OCONUS....89

Figure 13

MOS PROFILE STATUS REPORT

The final report to be evaluated by MPS is the Summary of MOS Authorizations CONUS versus OCONUS. For this evaluation, the major rule is any MOS with more than 55 percent of its authorizations OCONUS is considered SIMOS.

In sum, the summary reports provided by MPS will decrease the time required to analyze MOS environmental, structural, and deployment data from days and weeks to minutes and hours. Additionally, accuracy should increase as a result of decreasing a large proportion of the manual data manipulation required in performing position data analysis today.

MPS Modified PCTAADS (MPCTAADS). MPS provides capability to modify PCTAADS by entering SGA data into the on-screen PCTAADS worksheet. Figure 14 presents a mockup screen picture of the PCTAADS worksheet. This worksheet is a combination of PCTAADS and an SGA application worksheet represented by the dotted line. The purpose of the worksheet is to provide the analyst with capability to apply a SGA to PCTAADS, create a MPCTAADS data file, and summarize MPCTAADS data while on-line with the MPS subsystem.

The significance of this capability lies in how the analyst must perform SGA application and data summarization in the MOS restructuring environment today. To execute these procedures, the analyst must first obtain a hard copy report of the MOS data, reproduce the report on a copying machine, manually apply the SGA to the copy, and then physically go through the marked-up report and perform counts to find what structure changes occurred as a result of SGA application.

MPS markedly reduces the degree of difficulty associated with this phase of analysis by automating the majority of tasks involved. If changes to the MOS data are required, the analyst enters them on the worksheet as depicted in Figure 15. Upon completion of entering the required SGA changes, the user exits the worksheet and MPS automatically compiles the data entered into the worksheet and the data from PCTAADS to create a MPCTAADS data file.

The purpose of the MPCTAADS data file is to support the MOS analyst with data developed through the application of the existing SGA (if applicable) to the MOS structure in PCTAADS. Application of the current SGA to PCTAADS is performed to create a baseline MOS data file. This procedure is necessary to ensure any MOS structural problems are not a result of misapplication of currently published SGA guidance. Often, MOS restructuring is triggered by structural problems that may be corrected through proper application of the existing SGA.

```
                          MOS 00X PCTAADS WORKSHEET

UNIT DESCRIPTION PARA LIN   DUTY TITLE  GR   MOS    ASI REQ  AUTH   PARA TITLE
SRC: 0234L   UIC: WH32AA
     MSL CO HHC   110  02   M MAINT NCO E7  00X40         1     1   MAINT SECT
NEW ...........   .... ...  ........... ..  .....   ... ...  ....  ...........
                  110  03   M MAINT NCO E6  00X301        2     2
    ...........   .... ...  ........... ..  .....   ... ...  ....  ...........
                  110  04   MSL REPAIR  E5  00X20         3     3
    ...........   .... ...  ..........  ..  .....   ... ...  ....  ...........
                  110  05   MSL REPAIR  E4  00X10         4     4
    ...........   .... ...  ..........  ..  .....   ... ...  ....  ...........

                                            PARA TOTAL   10    10

SRC: 0235L   UIC: WH33AA
     MSL CO HHC   103  01   M MAINT NCO E7  00X40   N1    1     1   MAINT SECT
NEW ...........   .... ...  ........... ..  .....   ... ...  ....  ...........
                  103  02   M MAINT NCO E6  00X30   N1    2     2   MAINT SECT
```

Figure 14

PCTAADS WORKSHEET

MOS 00X PCTAADS WORKSHEET

UNIT DESCRIPTION	PARA	LIN	DUTY TITLE	GR	MOS	ASI	REQ	AUTH	PARA TITLE
SRC: 0234L UIC: WH32AA									
MSL CO HHC	110	02	M MAINT NCO	E7	00X40		1	1	MAINT SECT
NEW	....	...	MAINT CHIEF	..	.....	...	..0	...0	....
	110	03	M MAINT NCO	E6	00X301		2	2	
....	....	...	....	..	.....	...	..1	...1	....
	110	04	MSL REPAIR	E5	00X20		3	3	
....	....	...	....	..	.....	...	..2	...2	....
	110	05	MSL REPAIR	E4	00X10		4	4	
....	....	...	....	..	.....	...	..3	...3	....
LINE ADDED.....	.110	.06	MSL REPAIR	E3	00X10	...	..4	...4	....
					PARA TOTAL		10	10	
					CHANGE TOTAL		10	10	
SRC: 0235L UIC: WH33AA									
MSL CO HHC	103	01	M MAINT NCO	E7	00X40	N1	1	1	MAINT SECT
NEW	....	...	....	..	.....	...	..0	...0	....
	103	02	M MAINT NCO	E6	00X30	N1	2	2	MAINT SECT

Figure 15

WORKSHEET DATA ENTRY

MPCTAADS data files may also be created by applying a proposed SGA developed by the analyst to the PCTAADS worksheet. For this procedure, the analyst accesses the PCTAADS worksheet, enters the proposed SGA data into the worksheet, creates another MPCTAADS data file, and runs MPS reports as described above. Because of the need for repetitive SGA applications in position data analysis, it will not be uncommon for several MPCTAADS data files to exist in the PDAT-JA data base.

The MOS Profiling Subsystem supports position data analysis by automating many of the difficult and time consuming analysis tasks. MPS's data sorting, generating, and reporting capabilities will free the MOS analyst from many of the manual data manipulation and data gathering requirements of position data analysis and provide more time for actual analysis.

The Resource Authorization Analysis Subsystem (RAAS)

The purpose of RAAS is to support comparative analysis between PCTAADS and PCPMAD data. Comparative analysis between TAADS and PMAD data is dictated by the Military Occupational Classification Structure (MOCS) Handbook. There are two major reasons for this type analysis. The first reason is to determine if the Major Army Commands are correctly documenting aggregate MOS authorizations in TAADS when compared to PMAD. The second reason is to prompt the analyst to assess and summarize the causes for the MOS data mismatches. Identification and resolution of MOS data mismatches between TAADS and PMAD are critical to development of an SGA that will provide adequate MOS grade distribution not only for the current authorization documentation year, but outyear documentation as well.

Comparative analysis in the "manual mode" requires the MOS analyst to perform a great deal of manual data searches and physical comparisons of TAADS and PMAD MOS data. This type of analysis work demands a great deal of time investment and is often a frustrating exercise for the analyst. To perform this analysis, the analyst must first gather reports of both TAADS and PMAD data and make copies of them. This process allows the analyst to retain a clean version of the documents while using the other copies as worksheets.

Next, the analyst compares the TAADS report with the PMAD report ensuring that each UIC number reflected on the TAADS report is also reflected on PMAD, and vice versa. If both documents contain the UIC, the analyst then checks to ensure that the aggregate and by grade total of MOS authorizations also match. If all information matches, the analyst checks off the UIC on both documents and moves on to the next UIC. If, however, there is no UIC match or the authorizations do not match between TAADS and PMAD, the analyst annotates the UIC on a separate worksheet and writes a brief description of what information did not match.

Once all data mismatches are identified and annotated, the analyst then must investigate the reasons for the mismatches. Many reasons exist for data mismatches. Some of these reasons include programmed changes to TOE and TDA or reductions in forces (RIF) that are not yet documented in TAADS, and new or revised manpower authorizations requirements criteria (MARC) data incorporated into PMAD but not yet reflected in TAADS, among many others.

RAAS Supported Comparative Analysis

As PCTAADS and PCPMAD are MOS specific data extracts of TAADS and PMAD, the comparative analysis required by the MOCS Handbook can be accomplished at the proponent level utilizing RAAS. Figure 16 provides a diagram of both PCTAADS and PCPMAD data files and the process used by RAAS to perform the comparative analysis operations. In this example, the dotted line beside the word "UIC" of both data files indicates the primary sort criteria for the comparative process is based on the Unit Identification Code. Also tagged as important data are MOS, grade, and authorizations. This indicates that RAAS will sort both data files for UIC match, MOS match, grade match, and then by number of MOS authorizations for each UIC by grade. If a data mismatch occurs within any of the data fields, then RAAS will generate a report to both the computer screen and printer.

Automated comparative analysis between TAADS and PMAD does exist today in the HQDA Decision Support System (DSS). However, as a group, the personnel proponents do not all: (1) have capability to access HQDA DSS, (2) have the proper ADP equipment (communications links, printers, data storage, etc.) to download information, (3) have proper user identification to access this function of DSS, or (4) have the training required to perform this task. Even if all personnel proponents could effectively access and utilize HQDA DSS, the system is already saturated. Therefore, it is doubtful that a personnel proponent could effectively complete a TAADS to PMAD comparison without being overridden by HQDA users with higher priority or waiting for days to receive the report if ordered through a batch retrival process.

RAAS PCTAADS and PCPMAD Comparative Analysis Report. The PCTAADS and PCPMAD Comparative Analysis Report provides the analyst with MOS data mismatches at the UIC level of detail. As depicted in Figure 17, this report lists the UICs where data mismatches occurred and an indication of what portions of the data did not match. In the example report, the first data mismatch occurred in PCTAADS UIC WH32AA as a corresponding UIC could not be found in PCPMAD. The second data mismatch occurred in UIC WH33AA as

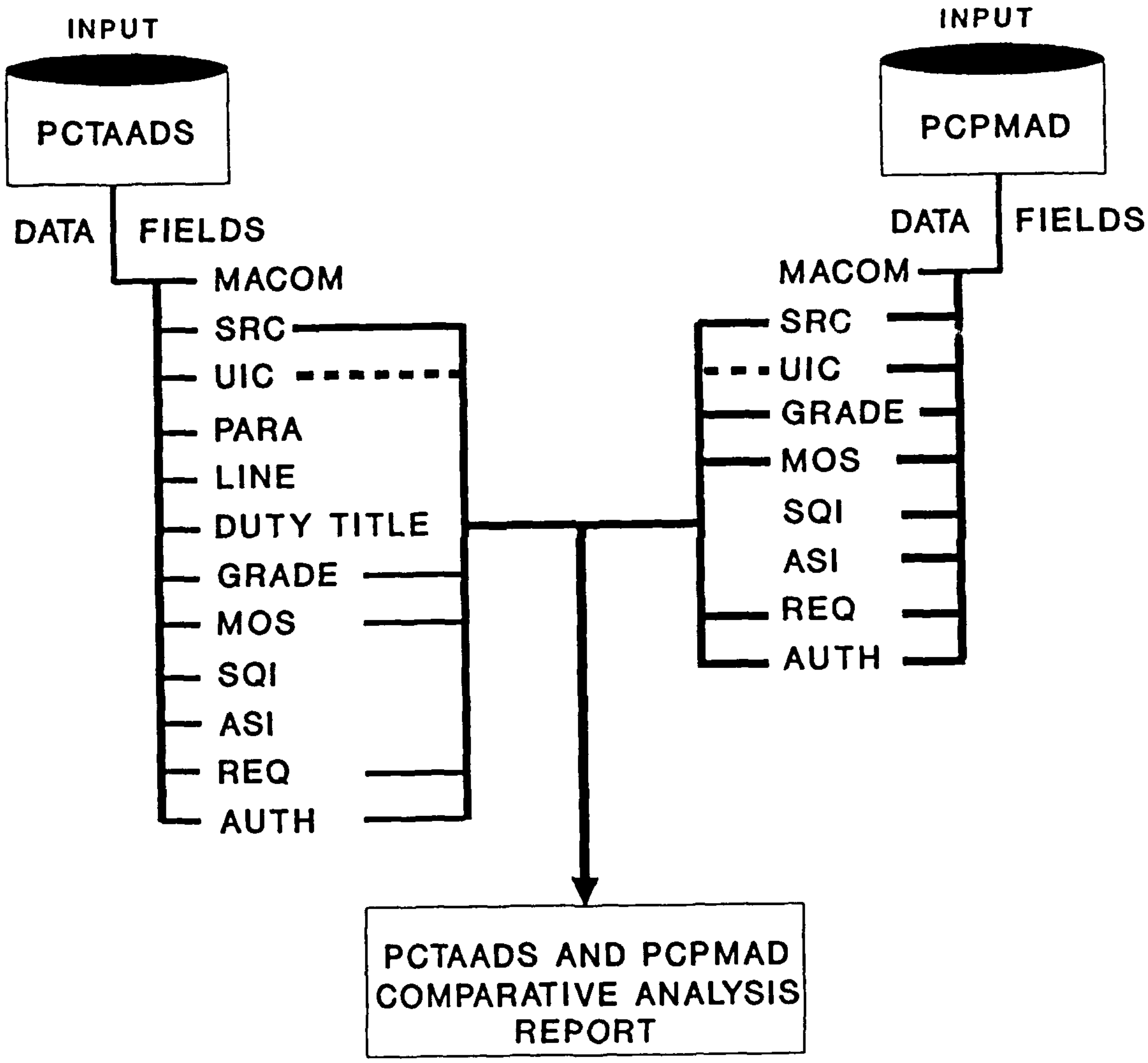


Figure 16

RAAS COMPARATIVE PROCESS

PCTAADS AND PCPMAD COMPARATIVE
ANALYSIS REPORT

MOS: 00X FY: 91

PCTAADS				PCPMAD				
UIC WH32AA				UIC NO MATCH				
UIC WH33AA				UIC WH33AA				
E3	E4	E5	TOTAL	E3	E4	E5	E6	TOTAL
4	2	1	7	3	2	1	1	7
UIC NO MATCH				UIC WH39AA				
UIC WJ01AA				UIC NO MATCH				
UIC WJ22AA				UIC NO MATCH				
UIC NO MATCH				UIC WJ23AA				

Figure 17

RAAS REPORT

the authorizations by grade in PCTAADS did not match the authorizations by grade for the UIC in PCPMAD. The third data mismatch occurred at UIC WH39AA as the UIC was found in PCPMAD, with no corresponding UIC match in PCTAADS.

In sum, RASS can completly automate the comparative analysis between TAADs and PMAD. In doing so, this analysis phase can be accomplished in minutes and hours rather than days and weeks.

Grade Structure Analysis Subsystem (GSA)

The purpose of GSA is to assist the analyst in performing grade structure analysis by supporting the assessment of career progression and stability of an existing MOS structure. GSA achieves this by incorporating the Army's Averade Grade Distribution Matrix (AGM) into a computer based software application. As AGM is the basis for GSA, the matrix will be discussed first, then an overview of GSA will be presented.

Average Grade Distribution Distribution Matrix (AGM). As depicted in Figure 18, AGM is a table reflecting a list of grade ranges (E3-E9, E3-E8, etc.) down the left side of the table. To the right of the grade range is a breakout of the grade cells associated with each grade range. The value of each grade cell within a range is expressed in a percentage of total MOS authorizations.

The AGM is utilized by the analyst to assist in determining if an MOS restructure is required. To make this determination, the current MOS grade structure is compared to a structure produced through application of the AGM. This procedure is performed by the MOS analyst to judge if the percentage of each MOS grade cell falls within the AGM constraints. A variance of plus or minus two percent is acceptable at each grade cell. If constraints are met, a restructure in terms of promotion potential and career progression is not required. However, if the constraints are not met the MOS should be restructured to conform as closely as possible to the structure produced through application of the matrix.

AGM should be used as a guide only. Restructuring an MOS should be based on the skill level needs and mission requirements of each position in which the MOS is found. The matrix provides an "ideal" structure that optimizes promotion potential and stability within Army MOSs in general. The matrix does not, however, address mission or skill level requirements unique to an individual MOS.

The process for using the AGM for determining promotion potential and stability of an MOS is fairly straightforward and is accomplished in four steps. First, the analyst computes the

AVERAGE GRADE DISTRIBUTION								
- MATRIX -								
Find grade pairings (E3 to E9) and read percentages...								
FROM / TO	E3	E4	E5	E6	E7	E8	E9	TOTAL %
E3 - E9	23.208	31.892	19.869	13.624	8.501	2.457	.459	100
E3 - E8	23.312	32.035	19.959	13.686	8.539	2.469		100
E3 - E7	23.902	32.846	20.464	14.032	8.756			100
E3 - E6	26.196	35.999	22.428	15.379				100
E3 - E5	30.956	42.540	26.504					100
E3 - E4	42.119	57.881						100
E4 - E9		41.530	25.873	17.741	11.071	3.199	.585	100
E4 - E8		41.774	26.026	17.845	11.135	3.219		100
E4 - E7		43.163	26.892	18.439	11.506			100
E4 - E6		48.775	30.388	20.837				100
E4 - E5		61.614	38.386					100
E5 - E9			44.251	30.343	18.933	5.473	1.000	100
E5 - E8			44.698	30.649	19.125	5.528		100
E5 - E7			47.313	32.443	20.244			100
E5 - E6			59.322	40.678				100
E6 - E9				54.428	33.962	9.816	1.794	100
E6 - E8				55.422	34.582	9.996		100
E6 - E7				61.577	38.423			100
E7 - E9					74.524	21.539	3.937	100
E7 - E8					77.578	22.422		100
E8 - E9						84.549	15.451	100

Figure 18

AVERAGE GRADE DISTRIBUTION MATRIX

"ideal" structure for a given grade range by multiplying the total number of MOS authorizations by the percentage for each grade cell in that range. For example, say the MOS begins at grade E3 and progresses to grade E9. The analyst would select the E3-E9 grade range on the matrix. Starting with grade E-3, the analyst calculates the authorizations for each grade cell by multiplying the total number of authorizations in the MOS by the percentage found under each grade: E3, E4, E5, and so on, until all grades are calculated. As the authorizations of each grade cell are calculated, the analyst annotates the results on a separate worksheet.

In the next step of the process, the analyst then annotates the current structure of the MOS by grade under the numbers produced by AGM as depicted on the second line of the figure. Next, the analyst compares the numbers and annotates the delta for each grade as shown on line three of the figure.

The last step is determining if the grade structures when compared, meet the acceptable variance of plus or minus two percent at each grade. The analyst accomplishes this by multiplying the AGM produced authorizations of each grade cell by two percent. Then by adding or subtracting the product of this calculation to or from the same number produces the upper and lower variance boundaries for the grade cell. This process is continued until the variance boundaries are established for all grade cells. If the authorizations for every grade cell of the current structure fall within the boundaries, the variance is acceptable.

Application of the AGM is not difficult; however, with all the steps and separate calculations that must be performed, the process is somewhat time-consuming and the error risk is fairly high. Additionally, AGM application as defined above is described with regard to the position data analysis phase of MOS restructuring. The AGM may also be applied many times during the SGA analysis and development phases of MOS restructuring.

GSA Design. GSA is designed to provide the analyst with an automated tool that will perform all of the computation functions required in application of the AGM. Additionally, the subsystem operates utilizing the same logic and flow process that the analyst would use when applying the AGM manually.

As depicted in Figure 19, GSA is basically a spreadsheet that incorporates all the grade ranges, grade cells, and mathematical formulas found in the AGM. In addition, the subsystem furnishes additional formulas that will provide the capability to: (1) automatically compute the delta between the AGM and current structure by grade, (2) compute upper and lower boundaries, and (3) provide a cross-check capability to insure all totals match.

TABLE C E3-E7						
	E3	E4	E5	E6	E7	TOTAL
AGM	79	109	68	47	29	332
CURRENT	94	100	48	54	36	332
DELTA	15	-9	-20	7	7	0
UB +2%	81	111	69	48	30	
CURRENT	94	100	48	54	36	
LB -2%	78	107	67	46	28	

Figure 19

GSA SPREADSHEET

When using GSA, the workload associated with grade structure analysis is significantly reduced. For example, in today's environment, application of the AGM to an MOS requires that many calculations be performed to develop an "ideal" structure. GSA, on the other hand, only requires the analyst to input the total MOS authorizations and the subsystem will then execute the computations required to develop an "ideal" grade structure.

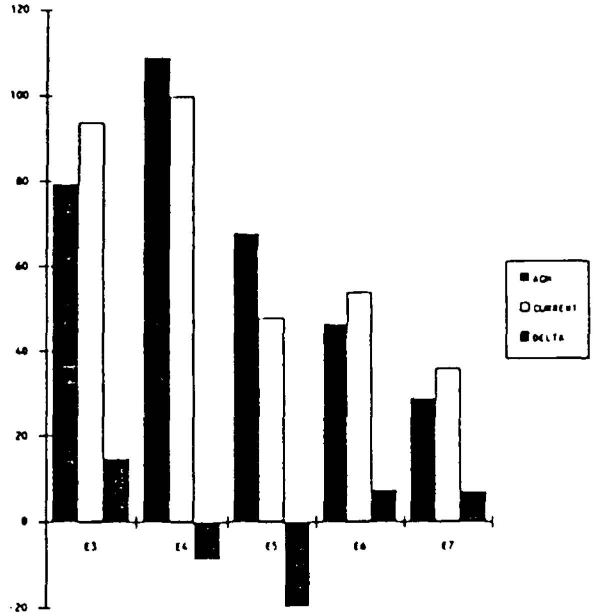
Comparison between the "ideal" structure and the current structure is also made more efficient by GSA. This step of the analysis process also requires the analyst to perform calculations in order to assess the delta between the two structures. GSA, however, requires that the analyst only input the current MOS authorizations by grade; the subsystem will then compute the delta between the AGM and current structures.

GSA provides the analyst with upper and lower boundaries. This function is automatic and requires no input from the analyst. Once all data have been entered into the spreadsheet for a particular grade range, the subsystem will produce the boundaries.

The cross-check capability is built in as a quality control measure. As all grade cell formulas are based on the AGM, they are expressed in percentages of whole numbers. The subsystem is designed to round the product of these formulas to the nearest whole number. Therefore, the totals may be affected by rounding. GSA will recognize which products are affected by rounding and highlight them so the analyst may make adjustments.

The final applications GSA provides are functional graphic portrayals of how closely the current structure compares to the AGM structure. Figure 20 provides a representation of these graphics. The first graph is a simple bar chart that furnishes a representation of how the current grade structure generally compares to the "ideal" structure, and provides the delta for each grade cell. This example graphic would quickly indicate to the analyst that authorizations for grades E3, E6, and E7 should be reduced and grades E4, and E5 authorizations should be increased for the MOS to fit within AGM constraints.

The second graph provides a depiction of the upper and lower boundaries and whether or not the authorizations for each grade cell of the current MOS falls within those boundaries. This graph serves as a quick reference to compare the actual structure in relation to the upper and lower boundaries. Additionally, with this graph the analyst can quickly confirm what is represented by the first graph. The first graph indicated that some grade authorizations required increasing while others needed to be reduced. By looking at the second graph, the analyst finds that all grade cells fall outside the boundaries. This would



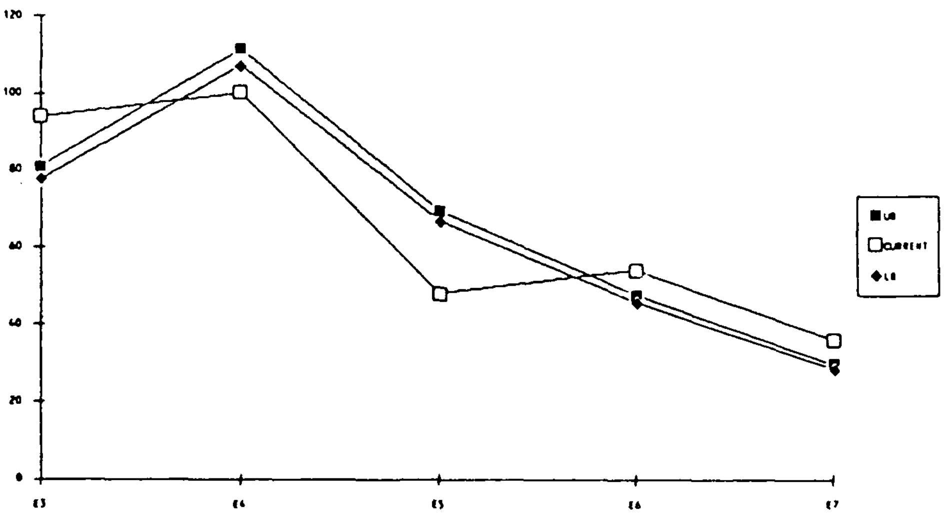


Figure 20

CSA GRAPHICS

have indicate the MOS does in fact require restructuring. Both graphs "real-time" linkages to the spreadsheet. This means any data changes entered into the spreadsheet can be automatically depicted on the graphs.

In sum, GSA will fully automate the application of the Average Grade Distribution Matrix to MOS grade structures. Although the manual application of the AGM is not a difficult process. Use of this subsystem by the analyst will reduce the time involved in grade structure analysis, and will significantly reduce if not eliminate, human error.

The Help Subsystem (HELP)

The Help Subsystem provides the analyst with two categories of assistance. The first category of HELP is designed to provide the analyst with standard software system operations and key functions information. This catagory of HELP information can be accessed for assistance in performing any subsystem application by selecting the HELP window on the main menu.

The second category of HELP is designed to provide analytical assistance. In this category, analysis information is programmed into each subsystem in order to provide the analyst with specific position data analysis information that is applicable to the subsystem in use. Analytical HELP may be accessed by pressing the F1 key during any phase of the PDAT-JA analysis process.

For example, suppose the analyst is using GSA to perform grade structure analysis and is unsure of what impacts AGM has on a restructuring decision. By pressing F1 for HELP during this process, the system would provide the analyst with policy guidance and analysis information associated with application of the Average Grade Distribution Matrix.

PDAT-JA: An Operating Scenario

The purpose of this section is to describe how PDAT-JA will operate and to show the flow of events that an MOS analyst will follow when performing a typical position data analysis. This section is made up of two parts. The first part will provide a scenario of analysis phases that occur in the PDAT-JA assisted analysis process. The second part is a hypothetical example of the PDAT-JA system in use. This example contains screen displays, process routines, and reports similar to those that an actual system might display.

PDAT-JA Assisted Position Data Analysis Scenario

Position data analysis occurs in a series of phases. PDAT-JA supports the process by providing automated analysis tools. The flow of events that occurs in the analysis process combines the analysis phases. There are five analysis phases:

- MOS data development;
- MOS data summarization;
- MOS baseline data development;
- MOS authorization comparative analysis;
- MOS grade structure analysis.

In the MOS data base development phase, the analyst uses the PDAT-JA Operating Subsystem to download MOS specific data from HQDA supplied TAADS and PMAD data into PCTAADS and PCPMAD data files which will reside in the PDAT-JA Data Base. Downloading is facilitated through a setup routine. In this routine, the analyst enters responses to a series of direction prompts related to MOS data development. The directions provide the analyst with an opportunity to select what MOS data are desired, where the data are to come from, and where the data should be stored. The MOS data will be used during later phases of position data analysis.

During the next phase, the analyst uses the MOS Profiling Subsystem's sorting routines to sort and summarize MOS data based upon preprogrammed position data criteria. The sorting routines will generate reports for the analyst to use in assessing the environment, structure, and deployment of an MOS at the outset of analysis.

In the MOS baseline data development phase, PCTAADS MOS data are modified through standards of grade application. To develop the MOS baseline, the analyst applies the SGA to current MOS data by using the SGA application worksheet screens. MPS will create a modified MOS data file based on changes resulting from application of the SGA. This data file constitutes an MOS baseline. The MOS baseline data are then sorted and summarized as outlined above to insure MOS restructuring requirements are not a result of previous SGA misapplication.

The MOS authorization comparative analysis phase uses RAAS to compare PCTAADS and PCPMAD data in order to identify MOS data mismatches. The result of this phase is a report listing the data mismatches between the two data files. The report is used by the analyst to assist in resolving the causes of the data mismatches prior to modifying an existing SGA or developing a new SGA for an MOS.

The final phase in the flow of PDAT-JA assisted analysis is MOS grade structure analysis. MOS grade structure analysis is based on a comparison between the current grade structure of an MOS and an "ideal" grade structure generated through application of the Army's Averade Grade Distribution Matrix. In this phase, GSA determines if the current grade structure falls within the variance boundaries of plus or minus two percent of the grade constraints produced by the AGM.

The flow of the phases in PDAT-JA assisted position data analysis are depicted in Figure 21. The flow represents only one analysis cycle from the time the analyst first accesses the PDAT-JA System to the completion of grade structure analysis. Because PDAT-JA is designed to support analysis of multiple MOSs and provides the capability to modify the PCTAADS data file, more than one analysis cycle may be required to ensure all needed MOS information is obtained.

Based on the position data information produced by PDAT-JA, the MOS analyst can then begin to make decisions on the need for an MOS restructure, the SIMOS implications of the MOS, additional skill requirements of the MOS, the SGA implications of the position data, as well as other position data specific requirements.

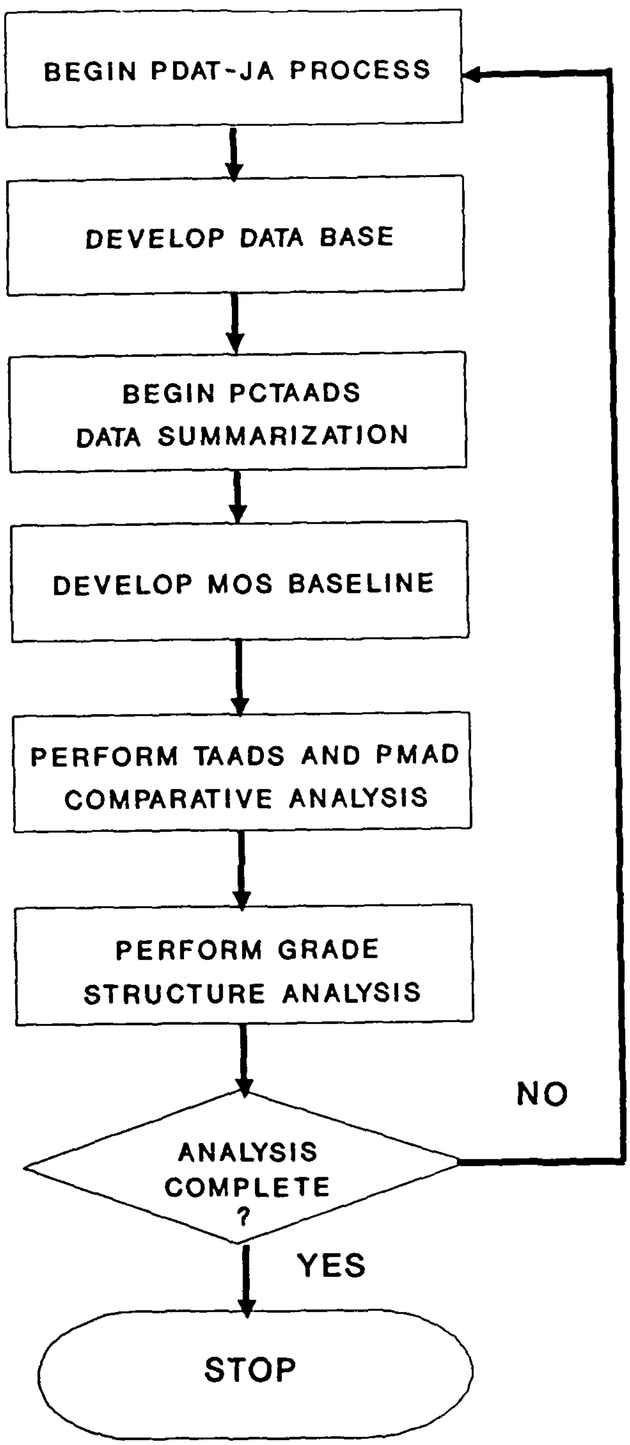


Figure 21

PDAT-JA PROCESS FLOW

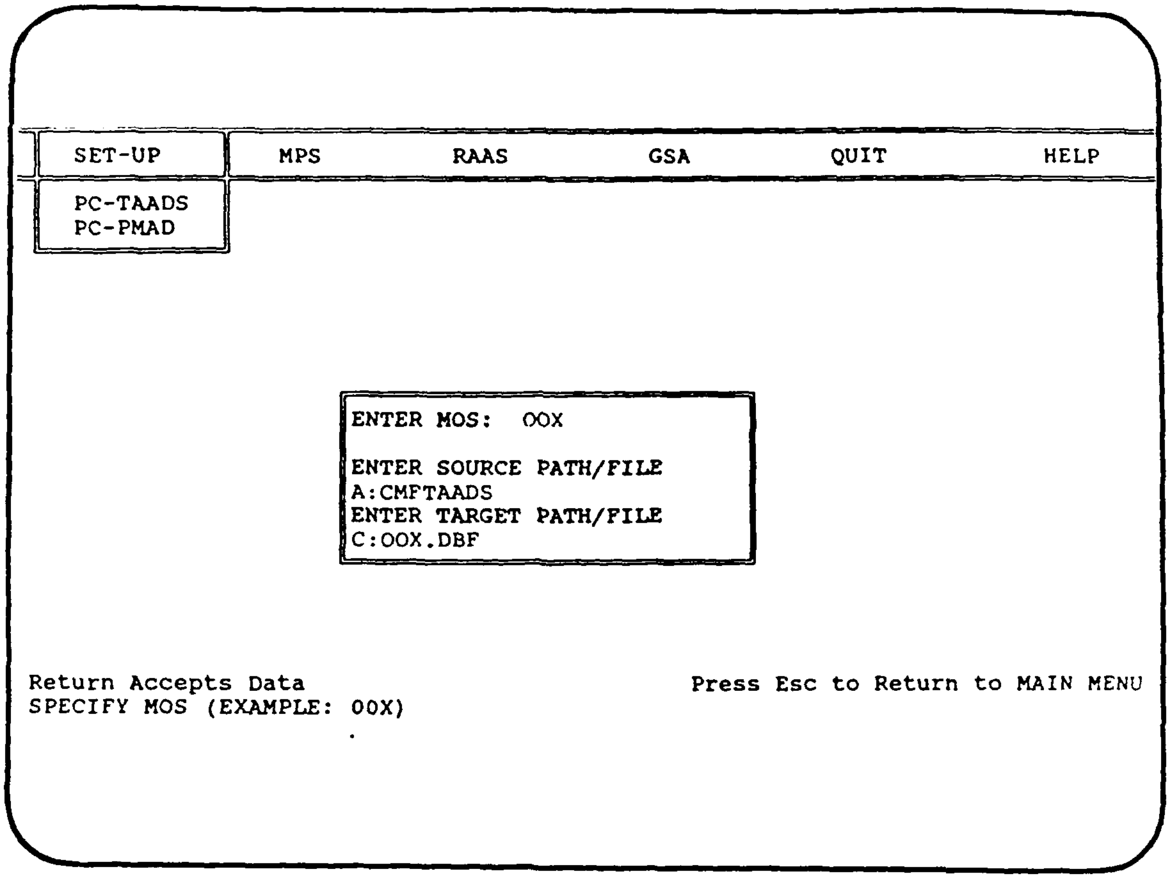
PDAT-JA System Use Example

SET-UP   MPS   RAAS   GSA   QUIT   HELP

Use Arrow Keys to Highlight Option   Press Enter to Select
DEVELOP MOS PROFILE/MODIFIED TAADS

Screen 1: Enter PDAT-JA System. The analyst can enter PDAT-JA by either inserting the program disk in A: drive, or from the hard drive, if installed and invoking the command "RUNJA" at the prompt. The analyst enters the system and selects one of the available PDAT-JA System options.

Although the screen is designed to follow the sequence of position data analysis, analysts familiar with PDAT-JA can move directly to the specific option desired. In this example, movement through the flow of analysis phases will be sequential, so the "SETUP" option has been selected. PDAT-JA System options will be displayed at top of the screen for the remainder of the example.



<u>**Screen 2: Develop PDAT-JA data base**</u>. Prior to entry into the analysis phases of PDAT-JA, MOS data must first be developed. This procedure ensures the proper MOS data are available in the system for analysis. In this procedure, the analyst selects which data are to be developed from a list of data types.

In this example, the data type is designated as "PCTAADS", and the data to be downloaded is MOS OOX. The analyst has specified the source drive and file from which the data is to be gathered as A: CMFTAADS and the target drive and file which the MOS data is to be stored as C: OOX.DBF. As a result of the information supplied by the analyst, the system will download and store the requested MOS data in the specified file and drive.

This data file development scenario would be used for developing "PCPMAD" data files as well. Once all MOS data files are developed, the analyst can then proceed into the analysis phases of PDAT-JA.

SET-UP	MPS	RAAS	GSA	QUIT	HELP
	REPORTS				

MOS SUMMARY REPORT

ASI SUMMARY REPORT

SQI SUMMARY REPORT

MACOM SUMMARY REPORT

TOE vs TDA SUMMARY REPORT

CONUS vs OCONUS SUMMARY REPORT

MOS PROFILE STATUS REPORT

Use Arrow Keys to Highlight Option   Press Enter to Select
RUN MOS SUMMARY REPORT

<u>**Screen 3: Profile the MOS**</u>. The first sequence of the PDAT-JA assisted analysis phases occurs in the MOS Profiling Subsystem. In this example, "MPS" is accessed and "REPORTS" is the procedure requested.

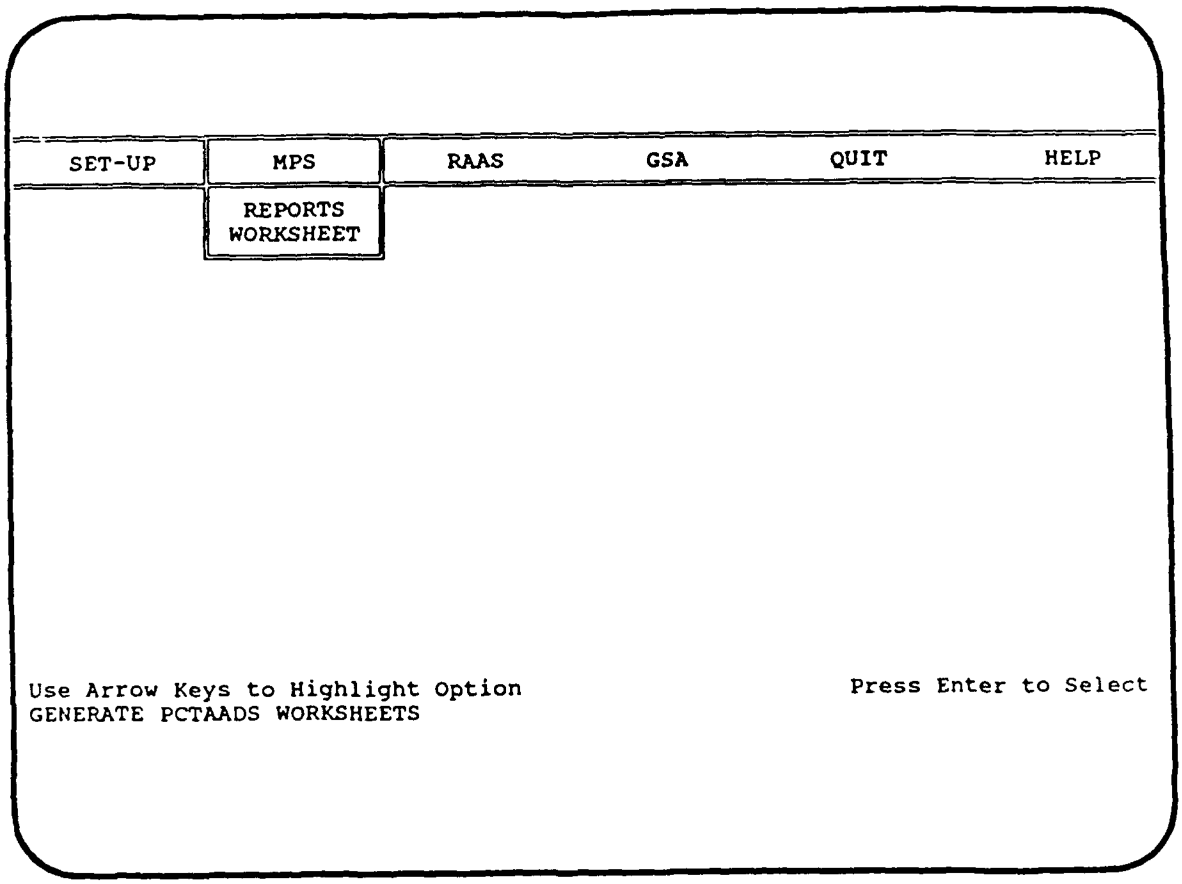
The analyst is presented with a list of seven summary reports from which to select the one(s) desired. The analyst may choose any number of reports to be generated from one to all seven. If more than one report is selected, MPS will generate them in the order requested. For this example, the Summary Report for MOS Authorizations By Grade is selected. Once a report selection is made, MPS searches, sorts, and sums the MOS data file based on criteria preprogrammed specifically for this report. With this data, actual position data analysis can begin.

SET-UP	MPS	RAAS	GSA	QUIT	HELP

SUMMARY OF MOS AUTHORIZATIONS BY GRADE

MOS			GRADE			TOTAL
00X	E3	E4	E5	E6	E7	
REQ	119	116	65	62	38	400
AUTH	94	100	48	54	36	332
DELTA	-25	-16	-17	-8	-2	-68

Screen 4: Develop MOS Authorizations by Grade Summary Report. MPS searches the MOS data file for data that match the preprogrammed criteria. The subsystem will automatically select and assemble the data into the proper report format. In this example, MPS provides the requested Summary of MOS Auhtorizations Report on the screen.



<u>**Screen 5: Profile the MOS, the PCTAADS Worksheet**</u>. The next sequence of analysis phases also occurs in MPS. In this example, "MPS" is accessed, "WORKSHEET" is the procedure requested. The purpose of this procedure is to gain access to the PCTAADS worksheet.

SET-UP	MPS	RAAS	GSA	QUIT	HELP

MOS 00X PCTAADS WORKSHEET

UNIT DESCRIPTION	PARA	LIN	DUTY TITLE	GR	MOS	ASI	REQ	AUTH	PARA TITLE
SRC: 0234L UIC: WH32AA									
MSL CO HHC	110	02	M MAINT NCO	E7	00X40		1	1	MAINT SECT
NEW	....	...	....	..	.....	...	...	....	....
	110	03	M MAINT NCO	E6	00X301		2	2	
....	....	...	....	..	.....	...	...	....	....
	110	04	MSL REPAIR	E5	00X20		3	3	
....	....	...	....	..	.....	...	...	....	....
	110	05	MSL REPAIR	E4	00X10		4	4	
....	....	...	....	..	.....	...	...	....	....
					PARA TOTAL		10	10	
SRC: 0235L UIC: WH33AA									
MSL CO HHC	103	01	M MAINT NCO	E7	00X40	N1	1	1	MAINT SECT
NEW	....	...	....	..	.....	...	...	....	....
	103	02	M MAINT NCO	E6	00X30	N1	2	2	MAINT SECT

Screen 6: Profile the MOS, Developing the MOS Baseline. The purpose of the PCTAADS worksheet is to provide a tool with which the MOS analyst can apply the current SGA to PCTAADS and develop an MOS baseline data file. In support of this, the PCTAADS worksheet permits the analyst to apply the SGA while on-line with the MPS system.

In this example, the analyst is presented with a screen containing PCTAADS and the worksheet represented by the dotted line. MPS does not allow direct access to the PCTAADS data; the only fields active are the fields that comprise the worksheet.

The analyst makes SGA revisions to MOS data by entering changes on the worksheet lines that correspond to the paragraphs and lines of the PCTAADS authorizations that reflect improper grade structure. Upon completion of the SGA application, the analyst selects "SAVE" and enters the name of the file to be saved. MPS will automatically incorporate the changes made by the analyst into a modified PCTAADS (MPCTAADS) data file which constitutes the MOS baseline.

```
SET-UP        MPS        RAAS        GSA        QUIT        HELP




Use Arrow Keys to Highlight Option                Press Enter to Select
PERFORM TAADS-PMAD COMPARATIVE ANALYSIS
```

Screen 7: Perform MOS authorizations comparative analysis. This analysis phase is supported by RAAS. In this phase, RAAS assists the analyst in performing a comparative analysis between the PCTAADS and PCPMAD data files. The purpose of this comparison is to identify MOS data mismatches between the two data files.

In this example, the analyst selects "RAAS" and enters the proper PCTAADS and PCPMAD files to be compared. RAAS performs the comparative analysis and reports the findings to the screen. Additionally, RAAS automatically formats a print file and sends the report to the printer.

SET-UP	MPS	RAAS	GSA	QUIT	HELP

SELECT APPROPRIATE GRADE RANGE TABLE

FOR GRADES:	GO TO:	FOR GRADES:	GO TO:
E3-E9	A59	E5-E9	A169
E3-E8	A69	E5-E8	A179
E3-E7	A79	E5-E7	A189
E3-E6	A89	E5-E6	A199
E3-E5	A99	E6-E9	A209
E3-E4	A109	E6-E8	A219
E4-E9	A119	E6-E7	A229
E4-E8	A129	E7-E9	A239
E4-E7	A139	E7-E8	A249
E4-E6	A149	E8-E9	A259

Use Arrow Keys to Highlight Option

Press Enter to Select

<u>Screen 8: Enter the Grade Structure Analysis Subsystem</u>. Grade structure analysis is the final data analysis phase assisted by PDAT-JA. This analysis sequence is supported by the GSA. The purpose of this analysis is to determine if the MOS as currently documented in PCTAADS requires restructuring.

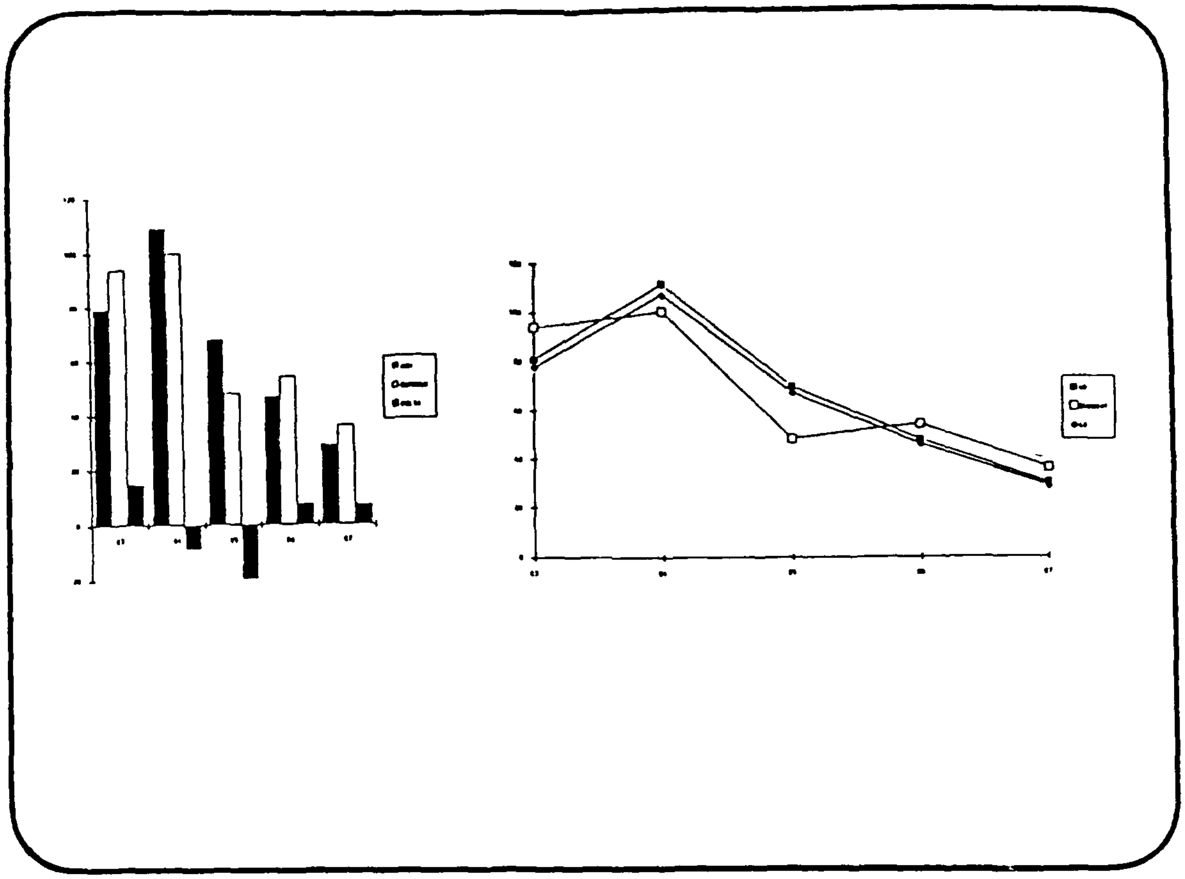
In this example, the analyst accesses "GSA" and selects E3-E7 as the grade structure to be analyzed. This procedure provides passage to the E3-E7 grade structure analysis table.

SET-UP MPS RAAS GSA QUIT HELP

TABLE C E3-E7	E3	E4	E5	E6	E7	TOTAL
AGM	79	109	68	47	29	332
CURRENT	94	100	48	54	36	332
DELTA	15	-9	-20	7	7	0
UB +2%	81	111	69	48	30	
CURRENT	94	100	48	54	36	
LB -2%	78	107	67	46	28	

Screen 9: Perform grade structure analysis. In this example, the analyst is presented with a table arranged to support grade structure analysis. The analyst enters MOS data from the MOS Authorizations Summary Report to perform this analysis phase.

To complete this analysis phase, the analyst first enters the total number of MOS authorizations in the total column of the AGM row. From this data, GSA computes the "ideal" grade structure for the MOS based upon AGM constraints. Next, the analyst enters the by grade MOS authorizations in the appropriate columns of the current structure row. GSA then computes the delta between the current structure and AGM and displays the upper and lower boundaries for each grade cell.



<u>Screen 10: Decide need for restructuring</u>. The decision on whether or not to restructure an MOS is aided by the grade structure analysis process. If the by grade MOS authorizations fall within the boundaries of plus or minus two percent, the MOS does not require restructuring.

In this example, the analyst is presented with two graphic representations. In the first graph, the current grade structure is compared with the "ideal" structure generated by AGM constraints. Also depicted are the delta at each grade. In this graph, the current MOS structure shows poor promotion potential because the MOS is depressed heavily at grade E5.

In the second graph, the current grade structure is compared with the upper and lower boundaries. This graph further emphasizes the need for restructure as all grades fall outside the boundaries.

```
SET-UP          MPS          RAAS          GSA          QUIT          HELP

MAIN MANU
     To Select a Subsystem Function:
                Use arrow keys to move selection box to desired Subsystem
                and press Enter.

Select          To:
SET-UP          Create data base from either TAADS or PMAD data.
MPS             Profile an MOS and generate summary reports.
RAAS            Perform comparitive analysis between PCTAADS and PCPMAD.
GSA             Perform grade structure analysis on an MOS.
QUIT            Return to DOS.
HELP            Get help for software operations.

Function keys
  PF1           Analytical HELP functions.



PRESS Esc TO RETURN TO MAIN MENU
```

Screen 11: Help Options. As with most user friendly systems, PDAT-JA provides readily accessible help options associated with both the operating system and each subsystem. PDAT-JA provides the analyst with information to perform all of the operations furnished by the system.

REFERENCES

REGULATIONS AND GUIDANCE

Headquarters, Department of the Army. The Army Authorization and Documents System (TAADS). Army Regulation 310-49. Washington, D.C.: Headquarters Department of the Army, 1983.

Headquarters, Department of the Army. Enlisted Career Management Fields and Military Occupational Specialties. Army Regulation 611-201. Washington, D.C.: Headquarters, Department of the Army. 1989.

Headquarters, Department of the Army. Guide for Preparation of Changes to the Military Occupational Classification Structure (MOCS). Washington, D.C.: Headquarters, Department of the Army, 1988.

Headquarters, Department of the Army. Military Occupational Classification Structure and Implementation. Army Regulation 611-1. Washington, D.C.: Headquarters, Department of the Army, 1989.

Headquarters, Department of the Army. The Life Cycle Management Model for Army Systems. Department of the Army Pamphlet 11-25. Washington, D.C.: Headquarters, Department of the Army, 1987.

Headquarters, Department of the Army. The Personnel Proponent System. Army Regulation 600-3. Washington, D.C.: Headquarters, Department of the Army, 1987.

PRIOR RESEARCH

Akman Associates, Inc. Review and Analysis of the MOS Restructuring Problem. Silver Spring, Md: Akman Associates, Inc. 1989.

Akman Associates, Inc. Concepts for an AFS Impact Model (AIM). Silver Spring, Md.: Akman Associates Inc., 1988.

American Institutes for Research. Report of Phase 1 Results. Army Synthetic Validity Project. Washington, D.C.: American Institutes for Research, 1989.

Dynamics Research Corporation. Extended Application of the HARDMAN Methodology to the Army's Light Helicopter Family Program (LHX) Technical Report, Addendum 3, MOS Consolidation Study PLan. Landover, Md.: Dynamics Research Corporation, 1987.

Shipman, M. and Finley, D. Military Occupational Specialty (MOS) Restructuring: An Annotated Bibliography. Fort Gordon, Ga.: Army Research Institute, 1989.

ACRONYMS

AGM	Average Grade Distribution Matrix
ASI	Additional Skill Identifier
CONUS	Continental United States
DOS	Disk Operating System
GSA	Grade Structure Analysis Subsystem
HQDA	Headquarters Department of the Army
IAW	In Accordance With
MACOM	Major Army Command
MARC	Manpower Requirements Criteria
MOS	Military Occupational Specialty
MPCPMAD . . .	Modified Personal Computer PMAD
MPCTAADS . .	Modified Personal Computer TAADS
MPS	MOS Profiling Subsystem
MPT	Manpower, Personnel, and Training
O&O	Operational and Organizational Concept
OCONUS . . .	Outside of Continental United States
P1	Combat Probability One
PC	Personal Computer
PCPMAD . . .	Personal Computer PMAD
PCTAADS . . .	Personal Computer TAADS
PDAT-JA . . .	Position Data Analysis Job Aid
PMAD	Personnel Management Authorization Data
RAAS	Resource Analysis Subsystem
RIF	Reductions in Forces
SGA	Standards of Grade Authorization
SIMOS	Space Imbalanced Military Occupational Specialty
SQI	Specialty Qualification Identifier
TDA	Table of Distribution and Allowance
TAADS	The Army Authorization Documents System
TOE	Table of Organization and Equipment
UIC	Unit Identification Code